

Knowledge and Attitudes about HIV/AIDS 2

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The Centers for Disease Control and Prevention (CDC) provide funding and technical assistance to the Behavioral Risk Factor Surveillance System (BRFSS) which was introduced in New York State in 1983 and has been conducted annually since 1985. Standardized questions developed by CDC are administered via a telephone survey. This survey provides state-specific prevalence estimates of diseases and preventable behaviors attributable to early morbidity and mortality. These data are used to assess health-related behaviors, plan and promote health programs and support legislative decisions.

This report describes an analysis of results from the 1993 HIV/AIDS module, which surveyed knowledge and attitudes about HIV/AIDS, perceived risk of HIV and experience with HIV testing.

The Behavioral Risk Factor Surveillance System - Summary Report is published quarterly. Issues will contain brief summaries on the risk factors included in each year's survey. Occasionally, issues will summarize special surveys, analysis of trends and more in-depth discussion of specific risk topics. Copies may be obtained by contacting:

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Knowledge and Attitudes about HIV/AIDS

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The 1993 Behavioral Risk Factor Survey assessed knowledge and attitudes about HIV/AIDS, perceived risk of HIV infection and experience with HIV testing in adult New York State residents aged 18 to 64.

Most adults correctly answered questions about HIV infection, but knowledge about HIV varied by age and level of education. New York State residents showed strong support (93%) for condom use by sexually active teens, and were mostly tolerant of contact with HIV-infected individuals. These attitudes had a strong positive relationship to knowledge about HIV and AIDS, as tested by this survey. More than one-quarter of adults had been tested for HIV, but less than 10% believed they were at high or medium risk for HIV infection.

The Behavioral Risk Factor Surveillance System (BRFSS) is a telephone survey funded and coordinated by the Centers for Disease Control and Prevention (CDC) and conducted by 49 participating states and the District of Columbia. The survey is composed of modules addressing specific diseases and health-related behaviors, such as smoking, exercise and nutrition.

The 1993 BRFSS module addressing human immunodeficiency virus (HIV) and the acquired immune deficiency syndrome (AIDS) included questions to assess respondents' knowledge and attitudes about HIV infection and AIDS, self-perceived risk of HIV infection and their experience with HIV testing. There were 1,951 respondents between the ages of 18 and 64 surveyed in New York State during 1993.

The questions in the HIV/AIDS module and response options are shown in Table 1. Responses to knowledge questions were categorized as correct or incorrect (see table). Responses showing willingness to (a) work next to a person living with HIV/AIDS, (b) have a child in a classroom with a child with HIV/AIDS or (c) encourage condom use for a sexually active teen were considered indicative of desirable attitudes regarding acceptance of persons infected with HIV and regarding HIV prevention. The responses to the

knowledge and attitude questions were analyzed individually, using data adjusted to represent the population of NYS aged 18 to 64. A summary score was also created for each group of three questions. Statistical testing utilizing the summary scores was done by t-test and ANOVA in SAS language with unadjusted data. Questions about HIV risk and testing were also analyzed using adjusted data, except for the last three listed in Table 1, which were not analyzed for this report. Responses may not add to 100% due to inclusion of refusers in the calculation of percentages.

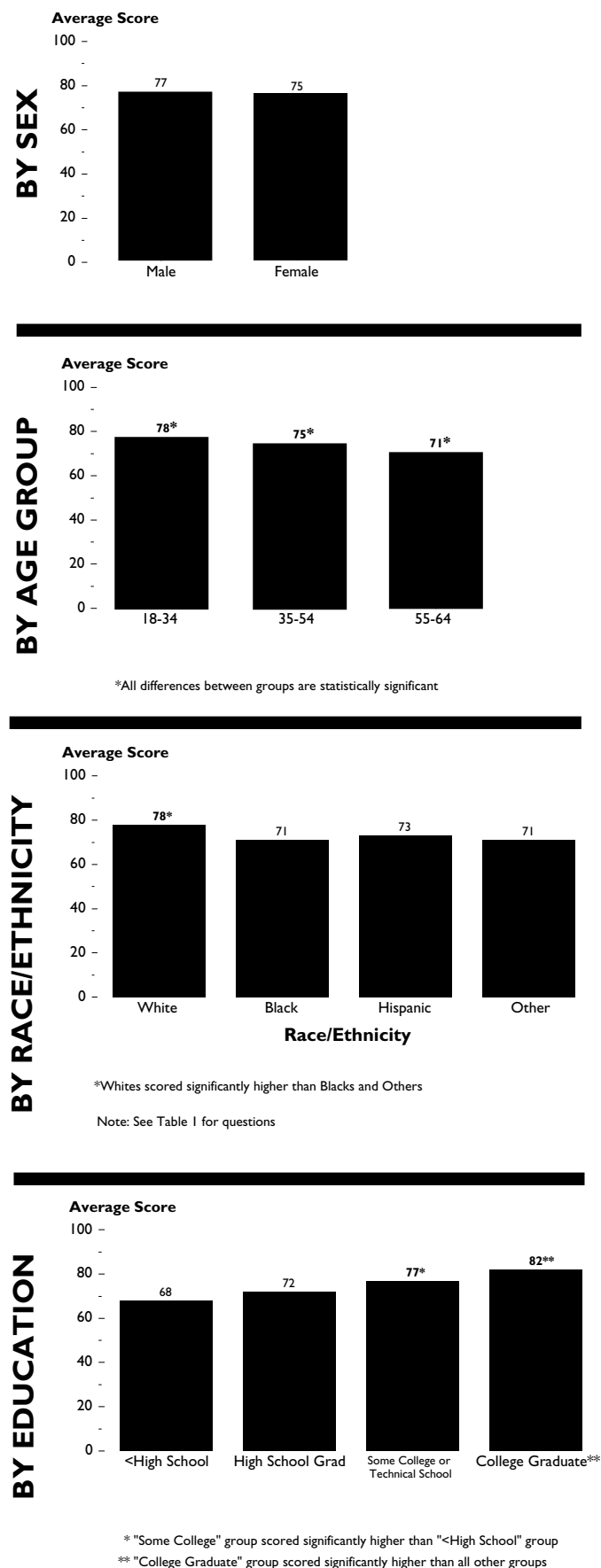
Knowledge of HIV/AIDS

The great majority of participants (86.6%) responded correctly to the question, "Can you tell by looking at a person if he or she has the AIDS virus?" A small percentage (3.5%) admitted that they did not know, and 9.3% incorrectly answered "yes."

A similar proportion (86.1%) of respondents believed that condoms were either very effective (31.4%) or somewhat effective (54.7%) for preventing HIV transmission through sexual activity. The remainder either believed that they were not at all effective (5.6%), said they did not know (6.7%), were not familiar with the method (0.1%) or refused to answer that question (1.5%). This question is subject to interpretation. Although the failure rate of latex condoms has been well documented, it is possible that individuals with access to the same information could characterize them as either "very effective" or "somewhat effective." Therefore, either response was considered correct.

Participants were questioned regarding the availability of "medical treatment that may help a person who is infected with the AIDS virus live longer." Most responded that such treatment was available (55.4% responded "yes," 26.6% responded "no" and 16.8% did not know). This question is also subject to interpretation. Since the late 1980s, the antiretroviral drug zidovudine, or AZT, has been available for the treatment of HIV infection. Early efficacy studies demonstrated a short-term survival benefit, and the drug was widely believed to prolong life.¹ In 1993, the year of this survey, a preliminary analysis of a large European study

Figure 1. Knowledge of AIDS by Sex, Age, Race/Ethnicity and Education, New York State Adults Ages 18-64, 1993



was reported which concluded that early treatment with zidovudine did not significantly improve long-term survival.² Due to the changing information and perceptions about efficacy of HIV treatments for prolonging life at the time of the survey, it is possible that well-informed persons could have responded either "yes" or "no" to this question. However, only a "yes" response was considered correct for this analysis.

A composite knowledge score was calculated from the responses to the three knowledge questions. For any individual, possible scores were 0%, 33.3%, 66.7% and 100%, representing 0, 1, 2 or 3 correct responses to the three questions. The average knowledge scores of various demographic subgroups were compared in order to identify groups most in need of HIV/AIDS education. Figure 1 shows the knowledge scores by sex, age, race and educational attainment.

Males and females scored similarly on knowledge questions, with 77% and 75% overall correct responses, respectively. The knowledge scores showed a significant decline by age, with scores of 78%, 75%, and 71% for ages 18 to 34, 35 to 54, and 55 to 64, respectively. Whites scored significantly higher than blacks and others, but not Hispanics, with a knowledge score of 78%. Blacks, Hispanics, and all others had scores of 71%, 73%, and 71%, respectively, which were not significantly different from each other. Knowledge scores were higher at higher levels of formal education. College graduates scored significantly higher than all other educational subgroups, with a knowledge score of 82%. Respondents with some college or technical school had an average score of 77%, which was similar to the score of people with a high school diploma (72%) and significantly greater than the group with less than high school (68%).

Attitudes about HIV/AIDS

The majority of respondents (69.2%) said that they would be willing to work next to or near a person who they knew was infected with the AIDS virus. However, 15.8% would not be willing, and 13.9% said they did not know.

When asked, "If you had a child in school, would you allow him or her to be in the same classroom with another child who is infected with the AIDS virus?", the majority (62.3%) responded "yes"; other respondents answered "no" (13.6%) or did not know (14.3%).

All respondents were asked, "If you had a teenager who was sexually active, would you encourage him or her to use a condom?" Only 3.0% answered "no"; 93.3% responded positively. Compared to the other 48 states surveyed, New

Yorkers were among the most willing to encourage condom use by sexually active teens for the prevention of HIV infection through sexual activity. The proportion in each state that would encourage condom use by sexually active teens ranged from 85.7% in Arizona to 94.9% in Vermont, with a median of 91.8%.

Positive responses to the questions about contact with people infected with HIV in the workplace and children infected with HIV in school are considered indicative of tolerant attitudes about the presence of HIV-infected individuals in society as well as a realistic assessment of the risk of acquiring HIV infection through casual contact. Additionally, a positive response to the question regarding condom use by teenagers was considered indicative of a constructive attitude about HIV prevention for this analysis. For the purpose of further evaluation, a summary score for responses to the questions about attitudes was created, with possible scores of 0%, 33.3%, 66.7% and 100%, representing 0, 1, 2 or 3 positive responses to the three questions. Attitude scores, representing the average of scores for individuals in each group, were compared by sex, age group, race/ethnicity and level of formal education (see Figure 2).

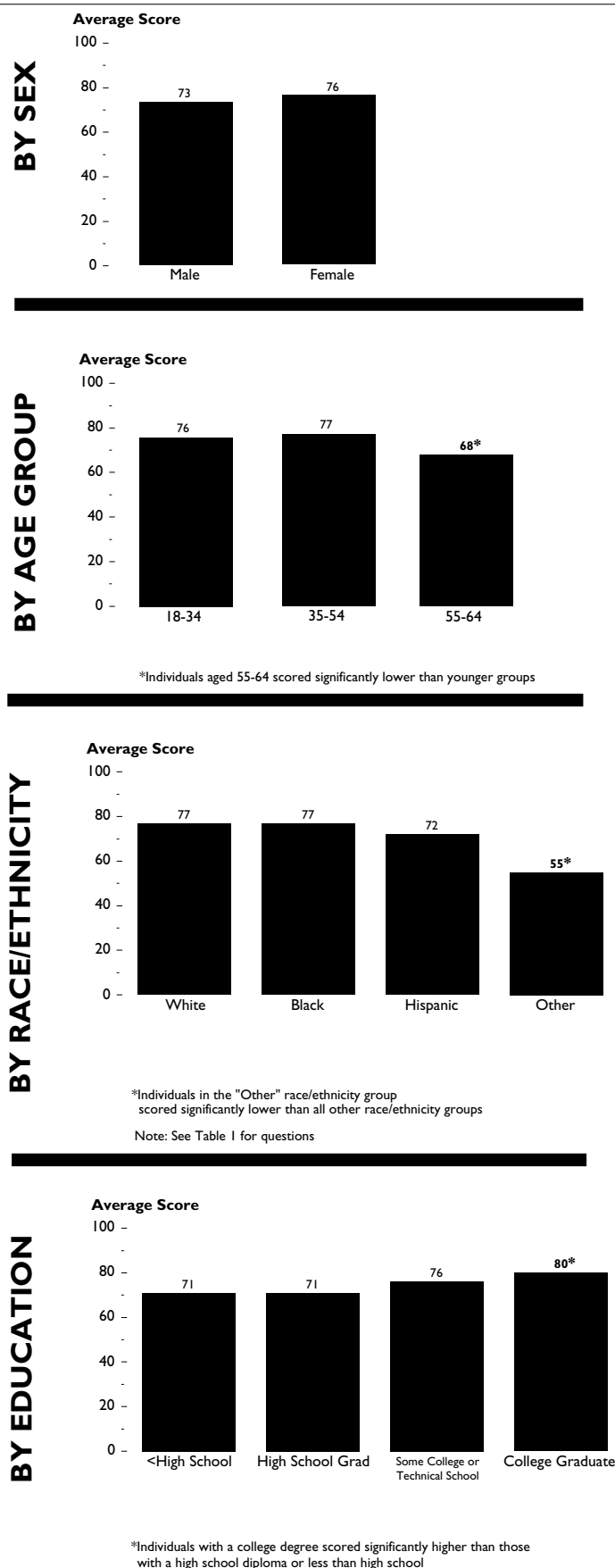
As was the case with knowledge about HIV/AIDS, men and women had similar attitude scores, with 73% and 76% overall positive responses, respectively. Attitude scores for adults aged 18 to 34 and 35 to 54 were similar (76% and 77%, respectively) and significantly greater than those for adults aged 55 to 64 (68%). Whites, blacks and Hispanics showed similar average attitude scores: 77%, 77% and 72%, respectively. All remaining individuals, grouped in the "other" category due to small numbers, had a significantly lower average score for these questions (55%). Asians and Pacific Islanders as a group had an attitude score of 50.6%; Native Americans and Native Alaskans as a group had an attitude score of 63.6%. The remaining individuals, comprising 60.5% of the "other" category, had no additional race information available, and had a score of 62.4%.

Finally, those with higher educational levels had higher scores on attitude questions. College graduates had a score of 80%, which was similar to the score for those with some college or technical school (76%), and significantly greater than individuals with a high school diploma or less than high school, whose scores were each 71%.

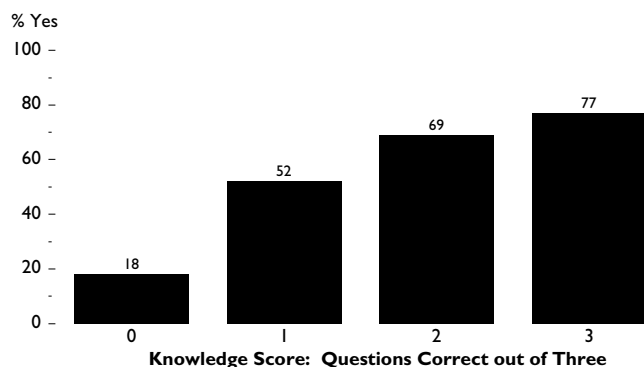
Relationship Between Knowledge and Attitudes

To determine whether knowledge of HIV/AIDS may have influenced attitudes, as measured by this survey, responses to the individual attitude questions were compared according to the number of knowledge questions answered correctly (see Figure 3). In each case, the percent-

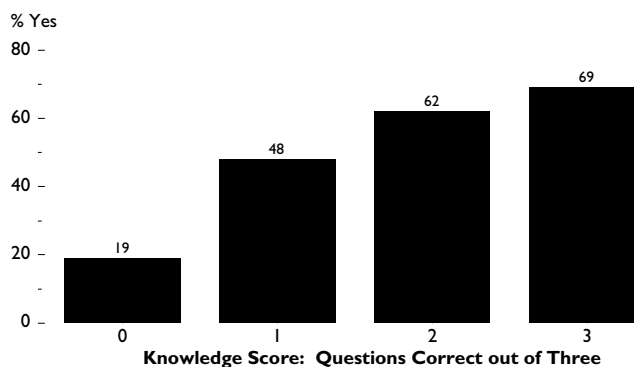
Figure 2. Attitudes About HIV Prevention and Acceptance of People with HIV Infection by Sex, Age, Race/Ethnicity and Education, New York State Adults Ages 18-64, 1993



Would you be willing to work next to or near a person who you know is infected with the AIDS virus?



If you had a child in school, would you allow him or her to be in the same classroom with another child who is infected with the AIDS virus?



If you had a teenager who was sexually active, would you encourage him or her to use a condom?

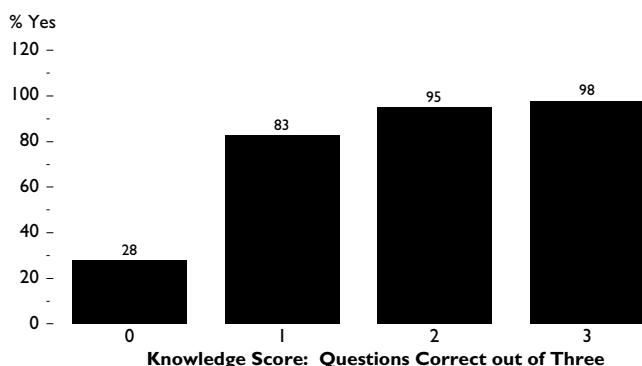


Figure 3. Attitudes about HIV/AIDS by Knowledge Level, New York State Adults Aged 18-64, 1993

age of positive responses to the attitude questions was lowest in the group with the lowest knowledge level, and higher at each higher knowledge level. Fewer than 20% of individuals at the lowest knowledge level responded positively to the questions addressing people with HIV infection in the workplace and in school. While 93% of the overall population would encourage condom use in sexually active teens, only 28% of individuals at the lowest knowledge levels said they would do so.

Perception of Risk for AIDS and Experience with HIV Testing

Most respondents (85.5%) felt that they were at low risk (36.8%) or no risk (48.7%) for getting the AIDS virus. A small percentage perceived that they were at high risk (2.3%), medium risk (7.4%) or did not know their risk

(3.5%). Between 0.8% and 3.8% of respondents in other states perceived themselves to be at high risk for HIV infection, with a median of 2.1%.

Most believed that their risk of becoming infected with HIV had stayed the same over the last five years (59.7%). Equal proportions believed that their risk had increased (18.1%) or decreased (18.0%); a small proportion did not know (2.7%).

Twenty-seven percent of adults 18 to 64 years old reported having ever had a blood test for HIV ("the AIDS virus"). Many respondents gave reasons apparently unrelated to their perception of their own risk (41.6%), including applying for life or health insurance (18.4%), for hospitalization or surgical procedure (9.9%), military service (5.2%), employment (3.7%), immigration (3.0%) or for a marriage license (1.3%). More respondents gave reasons related to perception of risk (51.1%) including "just to find out if (I was) infected" (26.3%), "for routine checkup" (14.6%), referral from physi-

Table 1. Questions in the HIV/AIDS Module, 1993 Behavioral Risk Factor Survey

Knowledge-related questions ¹	Attitude-related questions ²	HIV risk and testing
<p><i>Can you tell by looking at a person if he or she has the AIDS virus?</i> (Yes/No)</p> <p><i>Some people use condoms to keep from getting the AIDS virus through sexual activity. How effective do you think a properly used condom is for this purpose?</i> (Very Effective, Somewhat Effective, Not at all Effective)</p> <p><i>To your knowledge is there medical treatment available that may help a person who is infected with the AIDS virus live longer?</i> (Yes/No)</p>	<p><i>Would you be willing to work next to or near a person who you know is infected with the AIDS virus?</i> (Yes/No)</p> <p><i>If you had a child in school, would you allow him or her to be in the same classroom with another child who is infected with the AIDS virus?</i> (Yes/No)</p> <p><i>If you had a teenager who was sexually active, would you encourage him or her to use a condom?</i> (Yes/No)</p>	<p><i>What are your chances of getting the AIDS virus?</i> (High, Medium, Low, None)</p> <p><i>In the past five years (that is, since 1988), have your chances of getting the AIDS virus increased, decreased or stayed the same?</i> (Increased, Decreased, Stayed the Same)</p> <p><i>Except for donating or giving blood, have you ever had your blood tested for the AIDS virus infection?</i> (Yes/No)</p> <p><i>What was the main reason you had your last AIDS blood test?</i> (16 reason categories listed)</p> <p><i>When was your last test?</i> (Month/Year)</p> <p><i>Where did you have your last blood test for the AIDS virus?</i> (18 private and public facilities listed)</p> <p><i>If you received the results of your last test, did you receive counseling or talk with a health care professional about how to lower your chances of becoming infected with the AIDS virus or how to avoid passing it on to another person?</i> (Yes, No, Did not get results)</p>

1 Responses to knowledge-related questions classified as correct are shown in bold type.

2 All "yes" responses to attitude-related questions were considered indicative of desirable attitudes regarding HIV prevention and acceptance of persons infected with HIV.

cian (5.2%), because of illness (1.9%), referral by sex partner (0.7%) or occupational exposure (2.5%). The remaining 7.3% did not know (0.5%) or gave other responses.

Conclusions

New York State residents appear to be generally well informed about HIV/AIDS. However, 12.3% either did not know whether condoms were an effective prevention against sexually transmitted HIV or believed they were not effective, and 43.4% either did not know whether there were medical treatments available that could have a positive influence on survival or believed there were none. Lack of knowledge on efficacy of condoms could influence an individual's risk for acquiring HIV infection through unprotected sexual contact. Additionally, lack of information about potentially beneficial medical treatments could have a negative influence on an individual's decision to seek out HIV testing.

These survey results showed overwhelming support for condom use for sexually active teens. While most people had positive attitudes regarding exposure to persons living with HIV in the workplace or school, approximately 15% did not respond positively to each of these questions. Even those individuals with the highest knowledge scores responded positively to those questions less than 80% of the time (Figure 3). This finding may indicate that factors other than factual knowledge influence a person's willingness to associate with an HIV-infected child or individual.

Younger people and those with more education scored higher on knowledge questions and had more positive attitudes about teen condom use and contact with people with HIV/AIDS. Moreover, individuals with higher levels of knowledge about HIV/AIDS responded most positively to questions assessing these attitudes.

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- 2 Aboulker JP, Swart AM. Preliminary analysis of the Concorde Trial. *The Lancet* 1993;341:889-90.